

What is claimed is:

1. A computer architecture for global computer network-based monitoring of resource usage for at least one energy provider providing energy to a plurality of resource users, comprising:

at least one resource-metering data recorder, in operation, recording, one of periodically and aperiodically, resource usage data measured by a plurality of resource meters, operatively connected to a plurality of remotely located resource consuming devices;

a recorder translator, in operation, one of periodically and aperiodically, calling said data recorder, and one of periodically and aperiodically, transferring one of directly and indirectly resource usage data from said data recorder to a database; and

at least one global computer network server, in operation, receiving a resource usage data query from a user via a global computer network, retrieving the resource usage data of at least two resource users responsive to the resource usage data query entered by the user, aggregating the resource usage data for the at least two resource users, and transmitting resource management information based on the aggregated resource usage data collected from the plurality of resource

meters to the user via a global computer network site
responsively connected to said global computer network
and said at least one global computer network server
for analysis by the user of the aggregated resource
5 usage data collected by the at least two resource users
provided by the at least one energy provider, said at
least one global computer network server including
billing software having at least one of a billing
estimation and a billing engine for providing the user
10 with billing estimates based on existing billing
structures.

2. The computer architecture according to claim 1,
wherein said data recorder includes a modem connectable
15 to one of a public switched telephone network and a
wireless communications network and is in operative
communication with said at least one server, using one
of direct dial-up and Internet Protocol.

20 3. The computer architecture according to claim 1,
wherein said at least one server, in operation,
presents said resource management information one of to
a computer network of the user, to the user via the
global computer network, and in a downloadable data
25 file.

4. The computer architecture according to claim 3,
wherein said server includes at least one of resource
management software having at least one of load
5 profiles and load tables, financial management software
having at least one of real-time pricing, energy cost
calculation, and cost allocation, and rate analysis
software having rate comparison with variable rate
structures and pricing options.

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5. The computer architecture according to claim 1,
wherein said data recorder, in operation, records at
least one of a meter identification, data stamp, time
stamp, kilowatts, kilowatt-hours, MCF of gas, gph,
15 temperature, pressure, volts, amperes, power quality,
water low indication, pounds of steam, and measurement
units of electricity, natural gas, gasoline, cable
television, band width, telecommunications, short
distance service, long distance service, water,
20 Internet usage, radio usage, cellular device usage,
digital usage, and satellite usage.

6. The computer architecture according to claim 1,
further comprising:

25 a resource-metering data recorder/translator unit

including a global computer network node and, in operation, recording one of periodically and aperiodically resource usage measured by an associated resource meter,

5 wherein said at least one server, in operation, stores the resource usage data recorded by said data recorder/translator unit in said database.

7. The computer architecture according to claim 1,
10 wherein said at least one global computer network server includes a World Wide Web server and said global computer network site includes a World Wide Web site.

8. A method of monitoring resource usage, via a
15 global computer network, for at least one energy provider providing energy to a plurality of resource users, the method comprising the steps of:

(a) recording, one of periodically and aperiodically, resource usage measured by at least one
20 resource meter, operatively connected to at least one remotely located resource consuming device, using a resource metering data recorder;

(b) polling, one of periodically and aperiodically, the data recorder for the resource usage data;

25 (c) storing, one of periodically and aperiodically,

the resource usage data in a database;

(d) repeating said recording step (a), said polling step (b), and said storing step (c);

(e) determining, simultaneously to said repeating
5 step (d), whether a query from a user is received at a global computer network server;

(f) retrieving, when a query is received, resource usage data relevant to the user and at least two resource users from the database;

10 (g) aggregating the resource usage data for the at least two resource users; and

(h) transmitting resource management information based on the aggregated resource usage data to the user one of at a global computer network interface site and
15 in a downloadable data file, the global computer network interface site and the downloadable file being responsively connected to the global computer network server for analysis by the user of the aggregated resource usage data collected by the at least two
20 resource users provided by the at least one energy provider; and

(i) transmitting billing estimates to the user based on existing billing structures.

25 9. The method according to claim 8, further

comprising the step of repeating said determining step (e), said retrieving step (f), said aggregating step (g), and said transmitting step (h).

5 10. The method according to claim 8, wherein said recording step (a) includes recording at least one of a meter identification, data stamp, time stamp, kilowatts, kilowatt-hours, MCF of gas, gph, temperature, pressure, volts, amperes, power quality,
10 water low indication, pounds of steam, and measurement units of electricity, natural gas, gasoline, cable television, band width, telecommunications, short distance service, long distance service, water, Internet usage, radio usage, cellular device usage,
15 digital usage, and satellite usage.

11. The method according to claim 8, wherein said server includes at least one of resource management software having at least one of load profiles and load
20 tables, financial management software having at least one of real-time pricing, energy cost calculation, and cost allocation, rate analysis software having rate comparison with variable rate structures and pricing options, and billing software having at least one of
25 billing estimation and a billing engine.

12. A computer architecture for global computer network-based monitoring of resource usage for at least one energy provider providing energy to a plurality of resource users, comprising:

at least one resource-metering data recorder/translator unit including a global computer network node and, in operation, recording, one of periodically and aperiodically, resource usage data measured by a plurality of resource meters operationally connected to a plurality of remotely located resource consuming devices; and

at least one global computer network server, in operation, storing the resource usage data recorded by said data recorder/translator unit, receiving a resource usage data query from a user via a global computer network, retrieving the resource usage data for at least two resource users responsive to the resource usage data query entered by the user,

aggregating the resource usage data for the at least two resource users and transmitting resource management information based on the aggregated resource usage data to the user via a global computer network site responsively connected to said global computer network and said at least one global network server for

analysis by the user of the aggregated resource usage data collected by the at least two resource users provided by the at least one energy provider, said at least one global computer network server including
5 billing software having at least one of a billing estimation and a billing engine for providing the user with billing estimates based on existing billing structures.

10 13. The computer architecture according to claim 12, wherein said data recorder/translator unit includes a modem connectable to one of a public switched telephone network and a wireless communications network, and, in operation, communicates with said at
15 least one server using one of direct dial-up, Internet Protocol, and a publish/subscribe network communication protocol.

14. The computer architecture according to claim
20 12, wherein said data recorder/translator unit includes a World Wide Web site, which in operation displays at least one of the resource usage data recorded by said data recorder/translator unit and the energy management information.

15. The computer architecture according to claim
12, wherein said at least one server, in operation,
presents said resource management information one of to
a network of the user, to the user via the global
5 computer network, and in a downloadable data file.

16. The computer architecture according to claim
12, wherein said server includes at least one of
resource management software having at least one of
10 load profiles and load tables, financial management
software having at least one of real-time pricing,
energy cost calculation, and cost allocation, and rate
analysis software having rate comparison with variable
rate structures and pricing options.

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17. The computer architecture according to claim
12, wherein said data recorder/translator unit, in
operation, records at least one of a meter
identification, data stamp, time stamp, kilowatts,
20 kilowatt-hours, MCF of gas, gph, temperature, pressure,
volts, amperes, power quality, water low indication,
pounds of steam, and measurement units of electricity,
natural gas, gasoline, cable television, band width,
telecommunications, short distance service, long
25 distance service, water, Internet usage, radio usage,

cellular device usage, digital usage, and satellite usage.

18. The computer architecture according to claim
5 12, further comprising:

a resource-metering data recorder, in operation,
recording, one of periodically and aperiodically,
resource usage data measured by an associated resource
meter; and

10 a recorder translator, in operation, calling, one
of periodically and aperiodically, said data recorder,
and transferring, one of periodically and
aperiodically, the resource usage data from said data
recorder to said database.

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19. The computer architecture according to claim
12, wherein said at least one global computer network
server includes a World Wide Web server and said global
computer network site includes a World Wide Web site.

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20. A method of monitoring resource usage, via a
global computer network, for at least one energy
provider providing energy to a plurality of resource
users, the method comprising the steps of:

25 (a) recording, one of periodically and

aperiodically, resource usage data measured by at least one resource meter, operatively connected to at least one remotely located resource consuming device, using a resource usage data recorder/translator unit;

5 (b) publishing, one of periodically and aperiodically, the recorded resource usage data on a global computer network via a publish/subscribe network communication protocol, using the data recorder/translator unit;

10 (c) subscribing, one of periodically and aperiodically, to the published resource usage data, using at least one global computer network server;

(d) storing, one of periodically and aperiodically, the subscribed resource usage data to a database;

15 (e) repeating said recording step (a), said publishing step (b), said subscribing step (c), and said storing step (d);

(f) determining, simultaneous to said repeating step (e), whether a query from a user is received at
20 the at least one server;

(g) retrieving, when a query is received, resource usage data relevant to at least two resource users from the database;

(h) aggregating the resource usage data for the at
25 least two users; and

(i) transmitting resource management information based on the aggregated resource usage data to the user one of at a global computer network site and in a downloadable data file for analysis by the user of the aggregated resource usage data collected by the at least two resource users provided by the at least one energy provider, the global computer network site and the downloadable data file being responsively connected to the global computer network server; and

(j) transmitting billing estimates to the user based on existing billing structures.

21. The method according to claim 20, further comprising the step of repeating said determining step (f), said retrieving step (g), said aggregating step (h), and said transmitting step (i).

22. The method according to claim 20, wherein said recording step (a) includes recording at least one of a meter identification, data stamp, time stamp, kilowatts, kilowatt-hours, MCF of gas, gph, temperature, pressure, volts, amperes, power quality, water low indication, pounds of steam, and measurement units of electricity, natural gas, gasoline, cable television, band width, telecommunications, short

distance service, long distance service, water,
Internet usage, radio usage, cellular device usage,
digital usage, and satellite usage.

5 23. The method according to claim 20, wherein said
server includes at least one of resource management
software having at least one of load profiles and load
tables, financial management software having at least
one of real-time pricing, energy cost calculation, and
10 cost allocation, rate analysis software having rate
comparison with variable rate structures and pricing
options, and billing software having at least one of
billing estimation and a billing engine.

15 24. A computer architecture for computer network-
based monitoring of resource usage, comprising:
 at least one resource-metering data
recorder/translator unit including a computer network
node and, in operation, recording, one of periodically
20 and aperiodically, resource usage data collected by a
plurality of resource meters operationally connectable
to a plurality of remotely located resource consuming
devices, respectively; and
 at least one computer network server, in operation,
25 storing the resource usage data recorded by said at

least one resource-metering data recorder/translator unit, receiving a resource usage data query from a user via a computer network, retrieving the resource usage data responsive to the resource usage data query
5 entered by the user, and aggregating resource management information based on the resource usage data collected from the plurality of resource meters, transmitting the aggregated resource usage data to the user via a computer network site responsively connected
10 to said at least one computer network server and said computer network, and transmitting billing estimates to the user based on existing billing structures.

25. A computer implemented process of computer
15 network-based monitoring of resource usage assisting a user in the purchase of resources, comprising the steps of:

(a) recording, one of periodically and aperiodically, resource usage data measured by a
20 plurality of resource meters operationally connectable to a plurality of remotely located resource consuming devices, respectively;

(b) receiving a resource usage data query from a user via a computer network, and correlating the
25 resource usage data responsive to the resource usage

data query;

(c) aggregating the correlated resource usage data;

(d) transmitting the aggregated resource usage data to the user via a computer network site
5 responsively connected to said at least one computer network server and said computer network; and

(e) evaluating, by the user, the aggregated resource usage data; and

10 (f) purchasing the resources responsive to the aggregated resource usage data for said plurality of remotely located resource consuming devices.

26. In a computer architecture for global
15 computer network-based monitoring of resource usage including at least one resource-metering data recorder/translator recording resource usage data collected by resource meters connected to remote located consuming device, a method comprising the steps
20 of:

(a) monitoring energy use of a specific resource over the global computer network;

(b) evaluating the energy use of a specific resource responsive to said monitoring step; and

25 (c) determining whether maintenance is required for the specific resource responsive to the energy use

of the specific resource.

27. A computer system including software architecture reporting resource usage implemented by the computer system, comprising:
- financial management software implementing at least one of real-time pricing, energy cost calculation and cost allocation;
- resource management software means for implementing at least one of load profiles and load tables;
- rate analysis software means for implementing rate comparison with variable rate structures and pricing options, and;
- billing software means for implementing at least one of billing estimation and a billing engine.

28. The computer system according to claim 27, wherein said computer system further comprising the ability to implement at least one of:
- tracking different markets needs, aggregating energy information, combining gas, electric and power information, nominating maximum daily quantities, accessing and displaying any measurable data, signaling abnormal energy consumption, forecasting energy use, identifying of complementary loads and analyzing.

29. The computer system according to claim 27,
wherein said computer system further implementing the
function of:

5 creating load and cost curves for energy use;
creating maximum daily quality plots of energy and gas;
power quality analysis of outages, voltage dips and
sags, power factor, phase information for power, amps,
and volts, and/or harmonics; billing information which
10 creates billing comparisons, bill estimation, bill
simulation and includes a billing engine (for example,
billing and/or payment over the Internet); and weather
data, which is optionally specific to at least one of
a customer's locale, real-time energy prices and
15 utility cost management.

30. The computer system according to claim 27,
wherein said computer system further implementing the
function of:

20 weather data, which is specific to at least one of
a customer's locale, real-time energy prices and
utility cost management.

31. A computer architecture for a service provider
25 network for monitoring resource usage of a plurality of
remotely located resource consuming devices comprising:

a plurality of resource meters, operatively connected to a plurality of remotely located resource consuming devices and to an internal computer network via at least one of recorder translator, network server, dialer and applications server, said plurality of resource meters connectable to at least one of a public switched telephone network and a wireless communications network and in operative communication with at least one server;

10 an area computer network connected to said internal computer network, said internal computer network connected to at least one of database server, application server, web server, ftp site server;

a first firewall is connected to at least one of
15 said web server and said ftp site server;

at least one of first service provider network computer, in operation, receiving a resource usage data query from a user via a global network, retrieving the resource usage data responsive to the resource usage
20 data query entered by the user, and transmitting resource management information based on the resource usage data collected from the plurality of resource meters to the user via the global network via first firewall;

25 a modem is used by the user to connect to the global network and to the resource meter directly;

a second firewall is connected to at least one of said database server, said application server, said web server, said ftp site server and said resource usage data query is transmitted through the second firewall;

5 at least one second service provider network server includes a World Wide Web server, said service provider network site includes a World Wide Web site;

a backup server is connected to said internal computer network and to a backup storage facility.

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32. An arrangement for globally monitoring resource usage for at least one energy provider providing energy to a plurality of resource users, comprising:

15 a plurality of resource meters operatively coupled to remotely located resource consuming devices, said plurality of resource meters measuring resource usage data from said resource consuming devices;

20 at least one resource-metering data recorder for recording the measured resource usage data; and

at least one global computer network server configured to:

25 receive the resource usage data from said at least one resource-metering data recorder and store the resource usage data in a database system,

receive a resource usage data query from a

user via a global computer network,

retrieve resource usage data for at least two
resource users responsive to the resource usage data
query,

5 aggregate the resource usage data retrieved
for the at least two resource users, and

transmit resource management information
based on the aggregated resource usage data to the user
via said global computer network, and transmit billing
10 estimates for the user based on existing billing
structures.

33. The arrangement of claim 32, wherein said
global computer network server is further configured to
15 optimize the aggregated resource usage data.

34. The arrangement of claim 33, wherein the
global computer network server optimizes the aggregated
resource usage data by removing the resource usage data
20 of one or more of the at least one additional users.

35. The arrangement of claim 33, wherein the
global computer network server optimizes the aggregated
resource usage data by retrieving resource usage data
25 from different resource users.

36. The arrangement of claim 33, wherein the global computer network server optimizes the aggregated resource usage data by removing the resource usage data of one or more of the resource users, and retrieving
5 resource usage data from different resource users.

37. The arrangement of claim 33, wherein the optimized aggregate resource usage data represents a substantially constant rate of average resource
10 consumption for the resource users and the at least one additional user by said plurality of resource consuming devices.

38. A method of globally monitoring resource
15 usage for at least one energy provider providing energy to a plurality of resource users, the method comprising the steps of:

measuring resource usage data from a plurality of resource consuming devices;
20 recording the measured resource usage data;
transmitting the recorded resource usage data to a global computer network server;
storing the resource usage data in a database system;
25 receiving, by the global computer network server, a resource usage data query from a user via a global

computer network;

retrieving, by the global computer network server,
resource usage data for at least two resource users
responsive to the resource usage data query;

5 aggregating the resource usage data retrieved for
the at least two resource users; and

transmitting resource management information and
billing estimates based on the aggregated resource
usage data to the user via the global computer network.

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39. The method claim 38, further comprising a
step of optimizing the aggregated resource usage data
prior to performing the step of transmitting.

15 40. The method of claim 39, wherein the step of
optimizing further includes the steps of:

removing the resource usage data of one or more of
the at least two resource users; and

repeating the step of aggregating.

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41. The method of claim 39, wherein the step of
optimizing further includes the steps of:

retrieving resource usage data from different
resource users; and

25 repeating the step of aggregating.

42. The arrangement of claim 39, wherein the step of optimizing further includes the steps of:

removing the resource usage data of one or more of the additional users;

5 retrieving resource usage data from different users; and

repeating the step of aggregating.

43. A system for globally monitoring resource
10 usage for at least one energy provider providing energy to a plurality of resource users, comprising:

a plurality of resource meters operatively coupled to remotely located resource consuming devices, said plurality of resource meters measuring resource usage
15 data from said resource consuming devices;

at least one resource-metering data recorder for recording the measured resource usage data; and

at least one global computer network server configured to:

20 receive the resource usage data from said at least one resource-metering data recorder and store the resource usage data in a database system,

receive a resource usage data query from a user via a global computer network,

25 retrieve resource usage data for at least two resource users responsive to the resource usage data

query,

aggregate the resource usage data retrieved
for the at least two resource users,

transmit resource management information
5 based on the aggregated resource usage data to the user
via said global computer network, and

transmit billing estimates for the user based
on existing billing structures;

wherein the resource management information
10 includes a chart displaying information relating to
kilovolt ampere reactance (kVAR), power factor, real-
time pricing cost, and contract rate cost.

44. A system for globally monitoring resource
15 usage for at least one energy provider providing energy
to a plurality of resource users, comprising:

a plurality of resource meters operatively coupled
to remotely located resource consuming devices, said
plurality of resource meters measuring resource usage
20 data from said resource consuming devices;

at least one resource-metering data recorder for
recording the measured resource usage data; and

at least one global computer network server
configured to:

25 receive the resource usage data from said at
least one resource-metering data recorder and store the

resource usage data in a database system,

receive a resource usage data query from a
user via a global computer network,

retrieve resource usage data for at least two
5 resource users responsive to the resource usage data
query,

aggregate the resource usage data retrieved
for the at least two resource users,

transmit resource management information
10 based on the aggregated resource usage data to the user
via said global computer network, and

transmit billing estimates for the user based
on existing billing structures;

wherein the resource management information
15 includes a chart displaying resource usage by each
resource user and the aggregated resource usage.

45. The computer architecture of claim 1, wherein
said at least two resource users are remotely located
20 from each other.

46. The computer architecture of claim 1, wherein
said at least two resource users receive the resource
from different energy providers.

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47. The computer architecture of claim 12,

wherein said at least two resource users are remotely located from each other.

48. The computer architecture of claim 12,
5 wherein said at least two resource users receive the resource from different energy providers.

49. The arrangement of claim 32, wherein said at least two resource users are remotely located from each
10 other.

50. The arrangement of claim 32, wherein said at least two resource users receive the resource from different energy providers.

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51. The system of claim 43, wherein said at least two resource users are remotely located from each other.

20 52. The system of claim 43, wherein said at least two resource users receive energy from different energy providers.